



## PATENT ABSTRACTS OF JAPAN

(11) Publication number: **11337953 A**(43) Date of publication of application: **10.12.1999**

(51) Int. Cl. **G02F 1/1339**  
**G02F 1/1345**

(21) Application number: **10142665**  
 (22) Date of filing: **25.05.1998**

(71) Applicant: **TOSHIBA CORP**  
 (72) Inventor: **KAGA AKIHIRO**

**(54) LIQUID CRYSTAL DISPLAY DEVICE****(57) Abstract:**

**PROBLEM TO BE SOLVED:** To improve display quality and secure reliability by separating electrically interfered parts, and moreover to improve yield when a failure occurs in integrated driving circuits, by electrically connecting electric pads formed on both substrates via low-temperature fusible anisotropic conductive particles.

**SOLUTION:** Both substrates 11, 20 are opposed to each other, for example, with a 5  $\mu\text{m}$  spacing and are bonded in the periphery of the substrates with a sealant 30 made of epoxy compound resin, and this spacing is filled with liquid crystal 19. In advance to the fixing of the spacing between both substrates 11,

20 with the sealant 30, pad parts 17, 23 are electrically connected via a lower resistance. Since the sealant 30 is an insulating material, conductive particles have anisotropic conductive connection in which they are insulated in the lateral direction and the adjoining electrode pad parts 17, 23 on the same substrates 11, 20 are not brought into conduction. Thus, it is possible to make driving circuits 16, 22 normally operate and achieve an improvement in a yield.

COPYRIGHT: (C)1999,JPO

